

Affine structure from Motion 映射

2D image \longrightarrow 3D structure

$$D : \overset{2D}{[X_{ij}]} = \overset{\text{camera}}{\begin{bmatrix} A_1 \\ \vdots \\ A_m \end{bmatrix}} \overset{3D}{[x_1 \dots x_n]}$$

$(2m \times n) \qquad (2m \times 3) \qquad (3 \times n)$

$$\text{Rank}(D) = 3 \quad \leftarrow \text{come from 3D-data}$$

$D = MS$ is not unique decomposition
不唯一 - 分解

$$D = \underbrace{M \cdot S}_{\text{不唯一} -}$$